36TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { REPORT No. 650.

NATIONAL FOUNDRIES IN PENNSYLVANIA AND ALABAMA.

[To accompany Bill H R. No. 844.]

JUNE 18, 1860.

Mr. MCRAE, from the Committee on Military Affairs, made the following

REPORT.

The Committee on Military Affairs have had the subject of a national establishment for casting cannon under consideration, and submit the following report:

The attention of Congress has been called to this subject at almost every session since the adoption of the federal Constitution. As early as the 4th of May, 1798, an act was passed authorizing the President to establish a foundry to cast the cannon required by government, but owing to the want of means at the disposal of government the intention of the law could not be carried out. The subject has, however, continued to attract the attention not only of the Executive and Congress, but of many of the State legislatures, who have passed resolutions in favor of such a measure, and pointed out suitable locations where one might be established. Several committees of both houses of Congress have, at various times, devoted their attention to this subject, and the result of their labors has been presented in elaborate reports, which have exhausted the arguments that could be adduced as to the necessity for such a government establishment. The most elaborate of these was made by a select committee of the House of Representatives at the third session of the twenty-third Congress, and is referred to for much statistical information on the subject; another report made by a similar committee, at the first session of the twenty-eighth Congress, is also highly interesting, as giving a view of what had been done up to that time. Various other reports have been made by committees of this House, from time to time, all earnestly recommending the measure.

Your committee consider it is needless to adduce any argument at this time in favor of this measure. They consider that the national honor is at stake, and thus considering, have not hesitated to report the accompanying bill. No great nation like this should be at the mercy of private manufacturers, as regards the weapons upon which it has to rely to defend itself against aggression. The main object of

a government foundry is not alone the manufacture of cannon, although this capability will be a great auxiliary in the accomplishment of that object, which is the fixing of a standard of manufacture by which founders employed by government shall be governed. The principal aim of such an establishment will be to analyze the various materials of which cannon are made; the various modes in which these materials are to be treated to bring them to the greatest state of perfection; the proportions in which the different kinds of metal are to be used, and the manner of melting them and bringing them to a condition which will best accomplish the object intended; the manner in which these metals shall be brought to their final shape, and the proper models for that shape. If government can accomplish these things in its own establishment, and by its own officers or agents, then the great desideratum will be accomplished. It is next to impossible to compel a private manufacturer to come up with his work to a certain standard, unless you can dictate to him, from point to point, how that standard is to be reached; and with every desire on the part of a manufacturer to furnish cannon of the best quality, he will be very apt to think that *his method* of reaching that standard is better than that pointed out to him for his guidance. But if a founder is told by government that such ores mixed in such proportions, and treated in such a manner, have been proved to give certain results, and that unless he makes cannon exactly in such a manner he will not be employed, he will be most likely to comply literally with the order, especially if he knows that government can set its own agents to work to cast cannon which he refuses to make.

Our present system of fortifications requires in the aggregate about 6,500 cannon, of which we have about 4,200. For the navy we have about 2,600 cannon, which are as many as are wanted for that branch of the service with its present number of ships. Supposing these cannon to be all good and reliable, we require now about 2,300; but when it is considered that many of these cannon were made half a century ago, and that these would be more dangerous to the persons using them than to the enemy; that many of them which were deemed formidable at the time they were made are now deemed useless from the progress made in the service of gunnery; and that the recent introduction of rifled cannon will render most of ours entirely useless, it is not irrational to assert that we require at this time at least 5,000 cannon to arm our fortifications and navy.

The present, therefore, seems to be an auspicious time to inaugurate a new system. The powerful governments of Europe have been devoting much attention to the improvement of their means of offence and defence, and we should be taking measures in the same direction. As regards small arms, our national armories turn out work which challenges the admiration of the world, and the arms there made are not surpassed, if equalled, by any made in any other country. There is no reason why this should be the only great nation without its establishment for the manufacture of cannon; and with a government foundry, under the direction of government officers, there is no reason

to doubt that our cannon would soon attain the same superiority that now exists with regard to our small arms.

Some of the reasons which have heretofore operated to retard this measure have now been removed by the rapid progress of improvements in this country. Heretofore it has been deemed that no place would be suitable for a government foundry which did not possess these five requisites, viz: an ample supply of iron, coal and wood in its immediate vicinity; an ample and uninterrupted water-power; water transportation to the seaboard; security from attack by a foreign enemy; and salubrity. The steam-engine, the canal, and the locomotive, have dispelled the second and third of these requisites, which were the hardest to find in combination with the others, and at this time many suitable locations can be found which contain all the essential requisites. The greatest difficulties to be encountered are sectional and local jealousies. In view of these facts, and to gratify the proper desire of the people in different sections of the country on this subject, the committee have concluded that it is but just to establish *two national foundries*, leaving it to the wise discretion of the President to select their locations. One of the national armories is located at Springfield, in the State of Massachusetts, and the other at Harper's Ferry, in the State of Virginia; and the committee do not doubt that if the bill reported passes into a law, the national foundries will be located at points bearing a proper relation to the two national armories and to the whole country.

The question of location is not unaccompanied with difficulty, and, as intimated, sectional considerations enter largely into its determination. To prevent national loss from the existence of such apparently irremediable considerations, and to obviate objections produced by such causes, your committee, as a proper adjustment, would recommend the establishment of two foundries—one in Pennsylvania, and one in Alabama—at sites combining all the requisites for such establishments. Both are "sufficiently far from the seaboard to be secure from the sudden incursions of an enemy." Both have cheap and ready communication with the seaboards, one with the Atlantic, the other with the Gulf of Mexico; and both are unsurpassed for salubrity of climate, and for ample supplies of coal and iron and wood in their immediate vicinity.

Your committee would suggest Lehigh county as the proper location in Pennsylvania, leaving the particular spot to be designated by the President. This county, as is well known, has a most salubrious climate, and produces more iron than any one other county in the United States from the raw material. Within a circle of four miles around Allentown, the county seat, two thousand two hundred tons of pig metal are cast per week; while iron ores, and limestone of every variety, and of the finest quality, abound. The blast furnaces producing this metal are situated on the banks of the Lehigh river. The Mauch Chunk canal and Lehigh Valley railroad are located within a few rods of them. They are twenty-five miles distant from the great Lehigh coal fields, and connected by the canal and railroad mentioned. They are fifty-six miles distant from Philadelphia, and

about one hundred and fifteen from New York, (north of the former, and almost directly west of the latter,) and connected with each of these places by both canal and railroad. They have connexion with the great west by almost an air line of railroad, and also one with lakes Erie and Ontario, on the north. Thus this vicinity, as a site for a national foundry, would appear to possess all the necessary requisites of salubrity of climate, material for manufacturing guns in the cheapest and best form, and the utmost facility of transportation to those great distributing points, New York and Philadelphia, on the Atlantic seaboard, Buffalo and Erie, on Lake Erie, and Sackett's and other harbors, on lake Ontario.

Your committee would suggest Shelby county as the proper location in Alabama, leaving the particular spot to be designated by the President. Few portions of the United States have more attractions, and present more interesting features, than the mineral region of Alabama. It abounds in coal, iron ore, limestone, and marble, all of choicest quality and exhaustless quantity. Professor Tuomey's report on the geology of Alabama presents various analyses of the economical materials derived from ores and rocks. One specimen of red hematite, taken from Shelby county, gives, in a composition of 100 parts, 76.87 per cent. of peroxide of iron, and 53.81 per cent. of metallic iron. Another, of brown hematite, from the same county, gives 82.82 per cent. of peroxide of iron, and 57.97 per cent. of metallic iron. Later explorations have furnished better specimens, and the iron manufactured is of very superior quality. An analysis of limestone, from the same county, showed 90.43 per cent. of carbonate of lime. An analysis of marble from an adjoining county, Talledega, showed 90.43 per cent. of carbonate of lime and .38 of carbonate of magnesia. Various specimens of coal, partially analyzed, show 35 per cent. of volatile combustible matter and 57 and 60 per cent. of fixed carbon. Shelby county is now, by railroad and river navigation, readily accessible from the Gulf of Mexico. The completion of the roads now in process of construction will make it a centre from which roads will radiate, placing it in easy communication with all parts of the country.

The estimated cost of the necessary structures for an establishment of this character, including foundry building, shops, dwellings, offices, machinery, and steam-engine, if requisite, is two hundred and fifty thousand dollars ; add fifty thousand dollars for a suitable site, which makes three hundred thousand dollars for one foundry, or six hundred thousand dollars for the two. Of this sum it will be necessary to appropriate, for the next fiscal year, only two hundred thousand dollars for the purchase of sites and for the commencement of the buildings, and the bill reported provides for this amount only.